REMARKS

The Examiner's Office Action of January 10, 2003 has been received and its contents reviewed. The Examiner is thanked for the review and consideration of the present application.

By the above actions, claim 1 has been amended, and new claims 31-32 added. Accordingly, claims 1-12, and 31 and 32 are pending for consideration, of which claim 1 is independent, and claims 13-30 are withdrawn for consideration in response to an election requirement. In view of these actions and the following remarks, reconsideration of this application is now requested.

Referring now to the detailed Office Action, claim 5 stands rejected under 35 U.S.C. §112, first paragraph, as based on a disclosure which is not enabling. As understood, the Examiner relies on Figs. 4(a)-(c) and Figs. 5(a)-(d) and assert that there is no support for the feature of subjecting the semiconductor layer to the biased plasma recited in the step (b) with a photo resist film formed on the substrate. In response, Applicants respectfully submit that the features of claim 5 are supported at least in, e.g., Fig. 14(b) and page 47, line 20 to page 48, line 3 of the specification. Should the Examiner still maintain this rejection, Applicants would request the Examiner to further clarify the reasoning of the rejection.

Claims 1, and 3-11 stand rejected under 35 U.S.C. §103(a) as unpatentable over Haken (U.S. Patent No. 4,442,591) in view of Law (European Patent No. 661,732 A2). Further, claims 2 and 12 stand rejected under 35 U.S.C. §103(a) as unpatentable over Haken in view of Law, as applied to claims 1, and 3-11 above, and further in view of Jang et al. (U.S. Patent No. 5,674,783 – hereafter Jang).

As amended, claim 1 recites an insulating film formed on a semiconductor layer by oxidizing an exposed portion of the semiconductor layer on the substrate by biased plasma. According to the presently claimed invention, it is possible to form the insulating film with the photo resist film kept at a low temperature, and thereby uniform thickness of the insulating film can be obtained.

On the other hand, Haken discloses that a gate oxide film is formed by oxidization, and there is no suggestion or disclosure of the formation of a gate insulating film by oxidizing a semiconductor layer with using a biased plasma.

Likewise, Law does not disclose that the insulating film is formed by oxidizing the semiconductor layer. Law discloses the formation of a silicon oxy-nitride film in a plasma reactant with using SiH_4, NH_3, N_20 and N_2 gas that. Specifically, the silicon oxy-nitride film is deposited in a reaction to SiH_4 gas, O of N_2O gas, N of NH_3 gas, N_2O gas and N_2 gas.

Moreover, in a plasma-enhanced chemical vapor deposition apparatus 10 taught by Law, a susceptor 18 on which a substrate is mounted is connected to ground, a first electrode 16 opposing to the susceptor 18 is connected to an RF power source 36. However, Applicants respectfully assert that only normal plasma is generated in this configuration, and that the biased plasma like in the claimed invention does not occur.

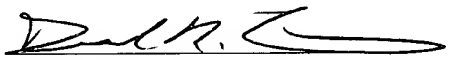
The remaining cited prior art references also fail to suggest or disclose that the insulating film is formed by oxidizing the semiconductor layer with using the biased oxide plasma.

The requirements for establishing a *prima facie* case of obviousness, as detailed in MPEP §2143 - 2143.03 (pages 2100-122 - 2100-136), are: first, there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference to combine the teachings; second, there must be a reasonable expectation of success; and, finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. As the cited prior art references fail to teach, disclose, or suggest generating, within the processing chamber, plasma biased toward a substrate with the processing chamber kept in an atmosphere including oxygen, and subjecting a semiconductor layer to the biased plasma, wherein an exposed portion of the semiconductor layer on the substrate is oxidized by the biased plasma, as recited in claim 1, the combination of the cited prior references in the §103(a) rejections is improper.

In view of the arguments set forth above, Applicants respectfully request reconsideration and withdrawal of all the pending rejections.

While the present application is now believed to be in condition for allowance, should the Examiner find some issue to remain unresolved, or should any new issues arise which could be eliminated through discussions with Applicants' representative, then the Examiner is invited to contact the undersigned by telephone in order that the further prosecution of this application can thereby be expedited.

Respectfully submitted,



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